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| EXAMINER | |
|---|---|
| PAK, JOHN D | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/771,398 | LIFSHITZ, RAN | |
| | Examiner | Art Unit | |
| | JOHN PAK | 1616 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

This Office action is in response to applicant's amendments and remarks, which were filed on 2/22/2007. Claims 1-30 are pending in this application and they will presently be examined to the extent that they read on the elected subject matter of record.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 28-30 are still unclear and indefinite. Applicant's amendments are noted, but they are insufficient. For example –

What is this?

28. *(currently amended)* The composition of claim 1, wherein the ratio between a first component ~~comprising said one or more metal ion(s) and said one or more chelating agent~~ and a second component ~~comprising said phosphorous acid, the salt or hydrate thereof~~ is 1:1 on a weight to weight basis, wherein [[.]]said first component including said one or more metal ion(s) and said one or more chelating agent and said second component including said phosphorous acid, the salt or hydrate thereof.

Should be "includes"

Same problems are noted in claims 29 and 30.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, 11-15, 17 and 24-27 stand rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/53760.

At the outset, it is recognized that the composition of WO 99/53760 "precludes application to living plants." However, after reviewing applicant's claim language, it has been determined that applicant's "plant disease" is not necessarily restricted to living plant disease. Broadly interpreted, a plant disease could encompass disease of harvested plants, such as rotten tomatoes or fungal and bacterial infection of wood. This is how WO 99/53760 is being applied here.

WO 99/53760 discloses in many examples the aqueous combination of 60 parts phosphorous acid and 10 parts of oxine copper[1] (page 30, Examples 1-5) or 30 parts phosphorous acid and 10 parts oxine copper (page 30, Example 6). Dilution for end use solution is disclosed (page 6, lines 27-30). Liquid solvent such as water and glycols is disclosed (page 8, lines 4-6). Treatment of logs and lumber is disclosed (page 1, lines 7-8).

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[1] It is noted that "oxine copper" is a copper cation complex with 8-hydroxyquinoline (page 9, line 4).

Applicant's claims 1 and 15 recite a proportion feature recited in terms of "when wet." It is not specified how much wetness is required. So apparently, the amount of water that would be required to meet this feature is open. According to this interpretation, the exemplified compositions of the cited reference meet the claim feature. Since the amount of water in the claim feature is not specified and the reference clearly teaches further dilution, the disclosed compositions are encompassed by the "when wet" proportional feature.

Claims 1 and 15 further recite a synergistic control of plant disease that is greater than the additive sum of the control provided by phosphorous acid/salt + control provided by metal-chelating agent. First, it is the Examiner's position that because the same copper, same chelating agent (8-hydroxyquinoline), and same phosphorous acid are present in the cited reference's composition, it would necessarily possess the same property as applicant's composition. Second, the cited reference teaches synergism between the biocides (page 29, lines 28-29). Therefore, applicant's claim feature is met by the cited reference.

Applicant's claim 3 requires various additives such as anti-freeze agents. The cited reference discloses adding glycols. Glycols would meet the anti-freeze agent feature.

Applicant's claims 12-14 and 25-27 recite activity against various pathogenic microorganisms. The Examiner's position is that because the cited reference discloses

compositions that contain the same exact composition components, the same exact control of the same exact pathogenic microorganisms would be present and obtained.

For these reasons, the claims are anticipated.

Applicant argues in his 2/22/2007 response that the claimed invention is directed to controlling plant diseases, which does not apply to "dead plant matter or harvested fruit and which cannot develop any symptoms, e.g., logs and lumber." Applicant cites the Webster's definition of "disease" (but not plant disease) for support. The Examiner is not persuaded.

**U.S. Patent 6,103,768**, claims 1 and 3 clearly and explicitly support the Examiner's interpretation that persons skilled in the art would broadly and reasonably interpret "plant diseases" to include treating non-living plant matter such as wood. Claim 1 there is drawn to control of "plant disease" and claim 3 is drawn to, inter alia, applying to wood products. **U.S. Patent 6,174,485** discloses that persons skilled in the art apply the term "plant disease" to wood (column 1, lines 21-27):

> Light wood producing trees, on the other hand, are usually fast growing and accordingly could easily provide the amounts of wood commercially needed. However, the relatively poor mechanical properties of light wood and its high capacity of absorbing moisture, making it open to attack by funghi and various plant diseases, prevent the direct use of this type of wood for most of the outlets of present interest.

**U.S. Patent 6,896,883** further disclose that commercial products for the control of plant diseases are applied not only to living plants but to harvested crops and wood products (column 1, lines 20-39).

Therefore, applicant's definition of an isolated term out of context, and argument related thereto, are not persuasive. A person skilled in the art would have recognized applicant's claim language to encompass the utilities disclosed by WO 99/53760.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-18, 20-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of WO 00/62609 and Thizy et al. (US 4,075,324) for the reasons of record.

WO 00/62609 discloses agents for control of fungal and bacterial diseases in plants comprising a chelate of zinc and a chelate of another metal ion such as copper (claims 1-11; 6; page 3, lines 2-3, 8-11, 16-23; page 4, line 1). copper sulfate and zinc sulfate are used as the source of copper and zinc ions, respectively (page 5, lines 10 and 16). Citric acid chelates of copper and zinc are known for control of fungal diseases (page 1, lines 12-14). Chelating agents can be "based upon organic acids,

organic alcohols ... or other synthetic chelating agents combined with a metal" (page 3, lines 18-19; see also claims 1, 2, 12). Glycine and citric acid are specified as chelating agents (page 4, lines 1-2). Activity against Erwinia species is disclosed (Field Experiment 1 on pages 10-12; Table 4 on page 11; Table 5a on page 12). Use of acidifying agents such as nitric acid and sulfuric acid is disclosed (page 9, lines 16-18). Concentration of use-composition is taught from the examples such as Table 5a, wherein 1.5% concentration of 1.06M to 1.6M solution of chelated metal ions showed microbicidal control. See also Table 4 and 5b.

Thizy et al. teach the plant fungicidal properties of phosphorous acid and its salts. See from column 1, line 26 to column 4, line 45. Phosphorous acid, $NaH_2PO_3$, $Na_2HPO_3$, $KH_2PO_3$ and $K_2HPO_3$ are disclosed (column 2, lines 10-39). Copper and zinc phosphites are also disclosed (column 3, item 13 and 17). Activity against Rhizoctonia solani (column 5, Example 1) and Phytophthora cinnamomi (column 7, Example 3) is disclosed. See also column 8, lines 1-31 for other broad spectrum activity disclosure, including activity against Pseudoperonospora and Peronospora species. Use with other fungicides and pesticides is taught (column 8, lines 32-42; column 9, lines 51-57). Doses of 0.01 to 5 g/liter are taught (column 8, lines 55-59). Incorporation of excipients such as fertilizers, penetration agents, stabilizers, colorants and surfactants is disclosed (column 9, lines 1-15).

The difference between the claimed invention and the cited references is that the references do not expressly disclose the combination of (a) one or more metal ions (elected = Cu, Zn) + (b) chelating agent + (c) phosphorous acid/salt/hydrate, as claimed. However, (a) + (b) is a known plant bactericide and fungicide, as evidenced by WO 00/62609; and (c) is a known plant bactericide and fungicide, as evidenced by Thizy et al. Therefore, to combine the two known plant bactericidal/fungicidal agents for the purpose of forming a third plant bactericidal/fungicidal agent, i.e. mixture of the two, would have been fairly suggested from the motivation to obtain the plant pathogen-controlling benefits of both plant bactericidal/fungicidal agents. In re Kerkhoven, 205 USPQ 1069, 1072 (CCPA 1980); In re Crockett, 126 USPQ 186 (CCPA 1960).

The proportion feature of claims 1 and 15 are noted. While such feature is not expressly disclosed by the cited references, the use concentration of the two fungicides are well within the concentration limits of applicant's claim feature.

The proportion feature of claims 28-30 are noted. While such feature is not expressly disclosed by the cited references, they would nonetheless have been obvious to the ordinary skilled artisan in this field. The ordinary skilled artisan is already provided with the knowledge of effective concentrations of chelated copper/zinc and phosphorous acid/salts. Further, copper and zinc phosphites are known plant bacteria and fungi controlling agents. Therefore, to mix the two types of active agents in a

weight ratio of 3:1 to 1:3, including 1:1, would have been obvious from the known concentrations of the individual active agents.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

For these reasons, the claims must be rejected again under 35 USC 103(a).

Applicant's arguments of 2/22/2007 relative hereto have been given due consideration but they were deemed unpersuasive. Applicant first argues that the Examiner has applied improper hindsight to arrive at the obviousness conclusion. The Examiner cannot agree. Both WO 00/62609 and Thizy et al. teach plant disease (e.g. fungal/bacterial disease) controlling agents, and Thizy et al. in particular teach combined use with additional fungicides and pesticides. Therefore, to combine the two known plant bactericidal/fungicidal agents for the purpose of forming a third plant bactericidal/fungicidal agent, i.e. mixture of the two, would have been fairly suggested from the motivation to obtain the plant pathogen-controlling benefits of both plant bactericidal/fungicidal agents. Kerkhoven, 205 USPQ at 1072 (CCPA 1980); Crockett, 126 USPQ 186. Expectation of success is plainly manifest from combining two known bactericidal/fungicidal agents for plants for the purpose of controlling plant diseases.

Applicant further argues that he has demonstrated "unexpected synergistic effect" (emphasis in the original). For example, applicant argues, Tables 1-4 indicate "obtaining efficiency more than either alone." The Examiner cannot agree because applicant's data is nowhere commensurate in scope with that of the claimed mixture of components. Applicant's chelating agent is open to virtually any type of chelating agent (see claims 1, 15). Data for citric acid [2] is hardly probative for other types of structurally divergent chelating agents such as saccharate, glucoheptonate, glycine. Asserted evidence of nonobviousness must be commensurate in scope with that of the claimed subject matter. Evidence of nonobviousness, if any, must be commensurate in scope with that of the claimed subject matter. In re Kulling, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); In re Lindner, 173 USPQ 356, 358 (CCPA 1972). Applicant's argument fails to address this issue, which was raised before in the previous Office action.

Claims 1, 3-6, 9-15, 17-19, 22-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Taylor (US 6,139,879) and Thizy et al. for the reasons of record.

Taylor discloses control of fungal and/or bacterial diseases of plants with a heavy metal chelate in an aqueous solution, wherein the heavy metal chelate includes Cu-EDDHA and Zn-EDDHA (claims 1-2). pEDDHA and EDDHMA are also disclosed as

[2] Citric acid is the only chelating agent that was tested in the specification data.

suitable chelating agents (claim 1; column 3, lines 1-7). 1-5 wt% concentration in water is disclosed (column 4, lines 14-16). Advantage of low or no phytotoxicity is disclosed (claim 1). Control of Erwinia and Xanthomonas is exemplified (Examples 6 and 9).

Teachings of Thizy et al. have been set forth above the discussion there is incorporated herein by reference.

The difference between the claimed invention and the cited references is that the references do not expressly disclose the combination of (a) one or more metal ions (elected = Cu, Zn) + (b) chelating agent + (c) phosphorous acid/salt/hydrate, as claimed. However, (a) + (b) is a known plant bactericide and fungicide, as evidenced by Taylor; and (c) is a known plant bactericide and fungicide, as evidenced by Thizy et al. Therefore, to combine the two known plant bactericidal/fungicidal agents for the purpose of forming a third plant bactericidal/fungicidal agent, i.e. mixture of the two, would have been fairly suggested from the motivation to obtain the plant pathogen-controlling benefits of both plant bactericidal/fungicidal agents. In re Kerkhoven, 205 USPQ 1069, 1072 (CCPA 1980); In re Crockett, 126 USPQ 186 (CCPA 1960).

The proportion feature of claims 1 and 15 are noted. While such feature is not expressly disclosed by the cited references, the use concentration of the two fungicides are well within the concentration limits of applicant's claim feature.

The proportion feature of claims 28-30 are noted. While such feature is not expressly disclosed by the cited references, they would nonetheless have been obvious

to the ordinary skilled artisan in this field. The ordinary skilled artisan is already provided with the knowledge of effective concentrations of chelated copper/zinc and phosphorous acid/salts. Further, copper and zinc phosphites are known plant bacteria and fungi controlling agents. Therefore, to mix the two types of active agents in a weight ratio of 3:1 to 1:3, including 1:1, would have been obvious from the known concentrations of the individual active agents.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

Applicant's arguments of 2/22/2007 relative hereto have been given due consideration but they were deemed unpersuasive. Applicant first argues that the Examiner has applied improper hindsight to arrive at the obviousness conclusion. The Examiner cannot agree. Both Taylor and Thizy et al. teach plant disease (e.g. fungal/bacterial disease) controlling agents, and Thizy et al. in particular teach combined use with additional fungicides and pesticides. Therefore, to combine the two known plant bactericidal/fungicidal agents for the purpose of forming a third plant bactericidal/fungicidal agent, i.e. mixture of the two, would have been fairly suggested from the motivation to obtain the plant pathogen-controlling benefits of both plant bactericidal/fungicidal agents. Kerkhoven, 205 USPQ at 1072 (CCPA 1980); Crockett,

126 USPQ 186. Expectation of success is plainly manifest from combining two known bactericidal/fungicidal agents for plants for the purpose of controlling plant diseases.

Applicant also makes the same arguments as to "unexpected synergistic effect" (emphasis in the original), but the argument is found unpersuasive for the reasons earlier stated. Applicant's chelating agent is open to virtually any type of chelating agent (see claims 1, 15). Data for citric acid is hardly probative for other types of structurally divergent chelating agents such as EDDHA, saccharate, glucoheptonate, glycine. Asserted evidence of nonobviousness must be commensurate in scope with that of the claimed subject matter. Evidence of nonobviousness, if any, must be commensurate in scope with that of the claimed subject matter. In re Kulling, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); In re Lindner, 173 USPQ 356, 358 (CCPA 1972). Applicant's argument fails to address this issue, which was raised before in the previous Office action.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 7, 9-18, 20, 22-30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. 6,689,392. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

It is noted that U.S. Patent No. 6,689,392 issued from the parent application to the instant application. The patented claims are directed to substantially similar subject matter wherein metal ions are zinc and copper and the chelating agents are citric acid and/or citrates. The elected invention here is directed to zinc/copper and the rejected claims read on or recite citric acid or citrate as the chelating agent. The phosphorous acid/salt/hydrate component is the same in both the patented claims and the instant claims. See patented claims 1-26.

Therefore, the instant claims clearly read on the subject matter of the patented claims; and the ordinary skilled artisan would have recognized the instant claims as an obvious variation of the patented claims in U.S. Patent No. 6,689,392.

Applicant offers to file a terminal disclaimer upon indication of allowability, but this can never happen. This ground of rejection cannot be withdrawn until a terminal disclaimer is filed, and maintenance of this ground of rejection necessarily means that there can be no indication of allowability.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

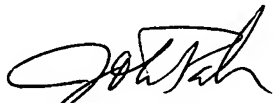
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620.** The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Johann Richter, can be reached on **(571)272-0646**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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